

HANDY COLLAPSIBLE SHOPPING CART

BACKGROUND OF THE INVENTION

Field of the Invention:

The invention relates to a light cart pushed by hand and,
5 more particularly, to a handy collapsible shopping cart.

2. Description of the Related Art:

In some countries, supermarkets and shops may provide polybags to consumers for holding purchased items. However, waste polybags may cause pollution to the environment if they
10 are not properly disposed of. Therefore, advanced countries prohibit people from using polybags in supermarkets to hold purchased items. When going to a supermarket to purchase foods and other items, consumers may have to carry a bag or a pushcart for carrying purchased items. However, conventional
15 pushcarts for this purpose are commonly heavy, not convenient for carrying.

SUMMARY OF THE INVENTION

The present invention has been accomplished under the circumstances in view. It is one object of the present invention
20 to provide a pushcart, which is folding collapsible. It is another object of the present invention to provide a handy collapsible shopping cart, which is easy to use. To achieve these and other

objects of the present invention, the handy collapsible shopping cart comprises an elongated base frame bar, two front bumper members, two wheel frame bars equipped with a respective wheel and respectively pivoted to the base frame bar at two
5 sides, the wheel frame bars each having a top sector gear, a supplementary frame bar longitudinally slidably coupled to the base frame bar, the supplementary frame bar having a bottom rack meshed with the top sector gears of the wheel frame bars and a top rack, two links bilaterally coupled between the
10 supplementary frame bar and the front bumper members, a retractable handlebar pivoted to the base frame bar and meshed with the top rack of the supplementary frame bar, the retractable handlebar being turned to move the supplementary frame bar on the base frame bar and to further move the front bumper
15 members and the wheel frame bars between the extended operative position and the collapsed non-operative position, and a lock adapted to lock the retractable handlebar and the supplementary frame bar.

BRIEF DESCRIPTION OF THE DRAWINGS

20 FIG. 1 is an elevational view of a handy collapsible shopping cart according to the present invention.

 FIG. 2 is an exploded view of the handy collapsible

shopping cart according to the present invention.

FIG. 3 is a side view of the handy collapsible shopping cart according to the present invention.

FIG. 4 is an enlarged view of a part of FIG. 3, showing
5 the lock pin of the retractable handlebar supported on the spring member and engaged into the lock hole at the base frame bar.

FIG. 5 is a sectional view of a part of the present invention, showing the coupling arrangement between the wheel frame bars and the base frame bar.

10 FIG. 6 is a schematic side view of the present invention showing the collapsing operation of the handy collapsible shopping cart.

FIG. 7 is a perspective view showing the handy collapsible shopping cart collapsed.

15 FIG. 8 is a sectional view in an enlarged scale of a part of the present invention showing the locating plates of the supplementary frame bar respectively engaged into the locating holes of the front bumper members.

FIG. 9 is a perspective view showing a bag installed in
20 the handy collapsible shopping cart according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1, 2, 3, and 5, a handy collapsible shopping cart is shown comprising an elongated base frame bar 1, and an elongated supplementary frame bar 2 longitudinally slidably coupled to the base frame bar 1 at the top. The supplementary frame bar 2 comprises two side plates 22 longitudinally bilaterally disposed at one end and defining with the bottom wall thereof a coupling groove 221, which receives the base frame bar 1, for enabling the supplementary frame bar 2 to be moved stably along the base frame bar 1. The supplementary frame bar 2 has a sliding slot 24 longitudinally extended on the middle. A pivot pin 141 is inserted through the sliding slot 24 and fastened to a pin hole 14 on the middle of the base frame bar 1 to secure the supplementary frame bar 2 to the base frame bar 1 and to limit sliding movement of the supplementary frame bar 2 relative to the base frame bar 1 to a predetermined distance corresponding to the length of the sliding slot 24. The base frame bar 1 comprises two upright mounting plates 11 bilaterally disposed at the rear end thereof. A retractable handlebar 5 is pivotally coupled with the bottom end thereof to the base frame bar 1 between the upright mounting plates 11 by a pivot 17. The retractable handlebar 5 comprises a tooth 51 transversely disposed at the bottom end

and meshed with a top rack 21 at the rear end of the supplementary frame bar 2. The base frame bar 1 comprises a mounting frame 15 transversely disposed at the front end. Two front bumper members 3 are symmetrically pivoted to the mounting frame 15 at two sides by a respective pivot 32. Two links 25 are coupled between the front bumper members 3 and the supplementary frame bar 2 at two sides. The links 25 each have one end respectively pivoted to the supplementary frame bar 2 by a respective pivot 252, and the other end provided with a longitudinal sliding slot 251 respectively pivoted to the front bumper members 3 by a respective pivot 253. Thus, the front bumper members 3 can be turned between a first position where the front bumper members 3 are longitudinally aligned in a line and extended across the base frame bar 1 (see FIGS. 1 and 6), and the second position where the front bumper members 3 are arranged in parallel and closely attached to the base frame 1 (see FIG. 7). The base frame bar 1 further comprises two coupling blocks 13 bilaterally disposed near the upright mounting plates 11. The coupling blocks 13 each have a beveled face 131. Two wheel frame bars 4 are respectively pivotally fastened to the coupling blocks 13 by a respective pivot 43, each having a bottom end provided with a wheel 41 and a top end terminating

in a sector gear 42 meshed with a bottom rack 23 at the bottom side of the supplementary frame bar 2. When turning the retractable handlebar 5 forwards, the tooth 51 is forced to move the top rack 21 and the supplementary frame bar 2 backwards along the base frame bar 1. At the same time the links 25 are moved with the supplementary frame bar 2 to turn the front bumper members 3 inwards toward the base frame bar 1, and the bottom rack 23 is forced to turn the sector gears 42, causing the wheel frame bars 4 to be respectively turned forwardly upwards and closely attached to the base frame bar. Therefore, the retractable handlebar 5, the front bumper members 3 and the wheel frame bars 4 can be received and closely attached to the base frame bar 1 and the supplementary frame bar 2 (see FIGS. 6 and 7). When collapsed, the collapsed pushcart can be received in a bag or the like for carrying by hand. When in use, lift the retractable handlebar 5 from the base frame bar 1 to push the supplementary frame bar 2 forwards along the base frame bar 1, thus the front bumper members 3 and the wheel frame bars 4 are respectively turned outwards from the base frame bar 1 to the extended operative position. The retractable handlebar 5 further comprises a spring member 521 mounted in the bottom end, and a lock pin 52 transversely disposed in the bottom end and

supported on the spring member 521. When extended out the handy collapsible shopping cart, the spring member 521 automatically forces the lock pin 52 into a lock hole 121 in one upright mounting plate 11 to lock the handy collapsible shopping cart in the extended position (see FIG. 4). A release button 55 is provided at the retractable handlebar 5 for pressing by the user to disengage the lock pin 52 from the lock hole 121. After disengagement of the lock pin 52 from the lock hole 121, the user can then turn the retractable handlebar 5 to collapse the handy collapsible shopping cart. Further, the front bumper members 3 each have a locating hole 32. The supplementary frame bar 2 further comprises two locating plates 26. When the collapsible pushcart collapsed, the locating plates 26 are respectively engaged into the locating holes 32 (see FIG. 8), preventing oscillation of the front bumper members 3 relative to the supplementary frame bar 2 and the base frame bar 1. Further, a bag 6 is provided at the handy collapsible shopping cart. The bag 6 has a closed bottom side 63 fastened to the front bumper members 3, and an open top side 64 hung on a hanger 53 at the retractable handlebar 5. A binding tape 61 formed of hook and loop materials 62 is inserted through a ring 54 at the retractable handlebar 5, and adapted to tie up the open top side 64 of the

bag 6. In order to prevent falling of the pushcart to the ground, a fixed foot member 16 is provided at the bottom side of the front end of the base frame bar 1, and two extension blocks 311 are respectively pivoted to the free ends 31 of the front bumper 5 members 3. When in use, the foot member 16 and the extension blocks 311 can support the pushcart stably on the floor.

A prototype of handy collapsible shopping cart has been constructed with the features of FIGS. 1~9. The handy collapsible shopping cart functions smoothly to provide all of 10 the features discussed earlier.

Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. For example, the fans 15 used can be cooling fans for use in hot weather, or fans with electric heater means for use in cold weather. Accordingly, the invention is not to be limited except as by the appended claims.